



**PANDIT JAWAHARLAL NEHRU COLLEGE OF AGRICULTURE
AND RESEARCH INSTITUTE, KARAİKAL – 609 603**

(Govt. of Pondicherry institution and Affiliated to the Tamil Nadu Agricultural University, Coimbatore)

E-mail: drvcimuthu@yahoo.co.in

Fax : 091-04368- 261260
Phone: Off : (04368) 261372
Res : (04368) 225459
Cell : 94435-27164

Dr. V. CHELLAMUTHU, Ph.D.,
Professor and Head (Agronomy)

Date: 17.11.06

**RELATIVE CONTRIBUTION OF DIFFERENT COMPONENTS OF
SYSTEM OF RICE INTENSIFICATION (SRI) TO THE YIELD OF RICE
(*Oryza sativa* L.)**

V. Sridevi and V. Chellamuthu

Department of Agronomy

Pandit Jawaharlal Nehru College of Agriculture and Research Institute

Karaikal – 609 603.

E- mail :drvcimuthu@yahoo.co.in

BACKGROUND

- ❖ System of Rice Intensification (SRI) is a popular method of rice cultivation in Madagascar.
- ❖ It was first synthesized in 1983 by Fr. Henri de Laulanie, a French Jesus priest. The grain yield was found to increase upto 50 to 100 per cent under SRI technique.

- ❖ Yield increase of 200 to 300 per cent has also been reported elsewhere (Uphoff, 2002).
- ❖ SRI system is now fast spreading to various rice growing countries.
- ❖ The SRI has many components *viz.*, planting of young seedling in square planting with one seedling hill⁻¹, providing soil aeration through cono weeding and regulation of irrigation by intermittent wetting and drying.
- ❖ The contribution of each of them has not been quantified adequately.
- ❖ Therefore, the present investigation was taken up at Karaikal.

OBJECTIVE

- ❖ To find out the relative contribution of individual components of SRI and their combinations to the grain yield of rice crop.

METHODOLOGY:

- ❖ Location: PAJANCOA & RI, Karaikal, U.T. of Pondicherry, India
- ❖ Nature of Experiment: Field experiment
- ❖ Season: Kharif (June to September 2005)
- ❖ Crop: Rice
- ❖ Variety: ADT 43 ((fine grain type)
- ❖ Duration: 110 days
- ❖ Soil type: Fluventic Ustropept
- ❖ Soil Reaction: Normal (7.20) with an EC of 0.33 dsm⁻¹
- ❖ Fertility: Low in available nitrogen, medium in available phosphorus and potassium
- ❖ Treatment combinations: 12

YOSC, NMSC, NMSH

NOSC, NOSH, YMRH

YMSC, YMSH, NORH

YOSH, YORH, NMRH

Notations	Descriptions
Y	Young seedlings of 14 days old
N	Normal seedlings of 21 days old
O	One seedling per hill
M	Multiple seedlings (3 seedlings per hill)
S	Square planting geometry with wider spacing of 22.5 cm x 22.5 cm
R	Rectangular planting geometry with closer spacing of 12.5 cm x 10.0 cm
C	Cono weeding four times at weekly intervals starting from 15 DAT to 36 DAT
H	Hand weeding twice (20 & 40 DAT)

RESULTS

- ❖ The highest grain yield of 3683 kg ha⁻¹ was obtained when all the four components of SRI (YOSC) were combined, which was due to :
 1. Better crop growth (increased plant height, root growth, leaf area and DMP)
 2. Improved physiological activity (increase in CGR, RGR, NAR, LAD and nutrient uptake)
 3. Increase in yield attributes (more number of panicles plant⁻¹, panicles m⁻², more panicle length and weight and highest number of filled grains panicle⁻¹).
- ❖ The relative contribution by individual components and their combinations are very significant (Fig.)

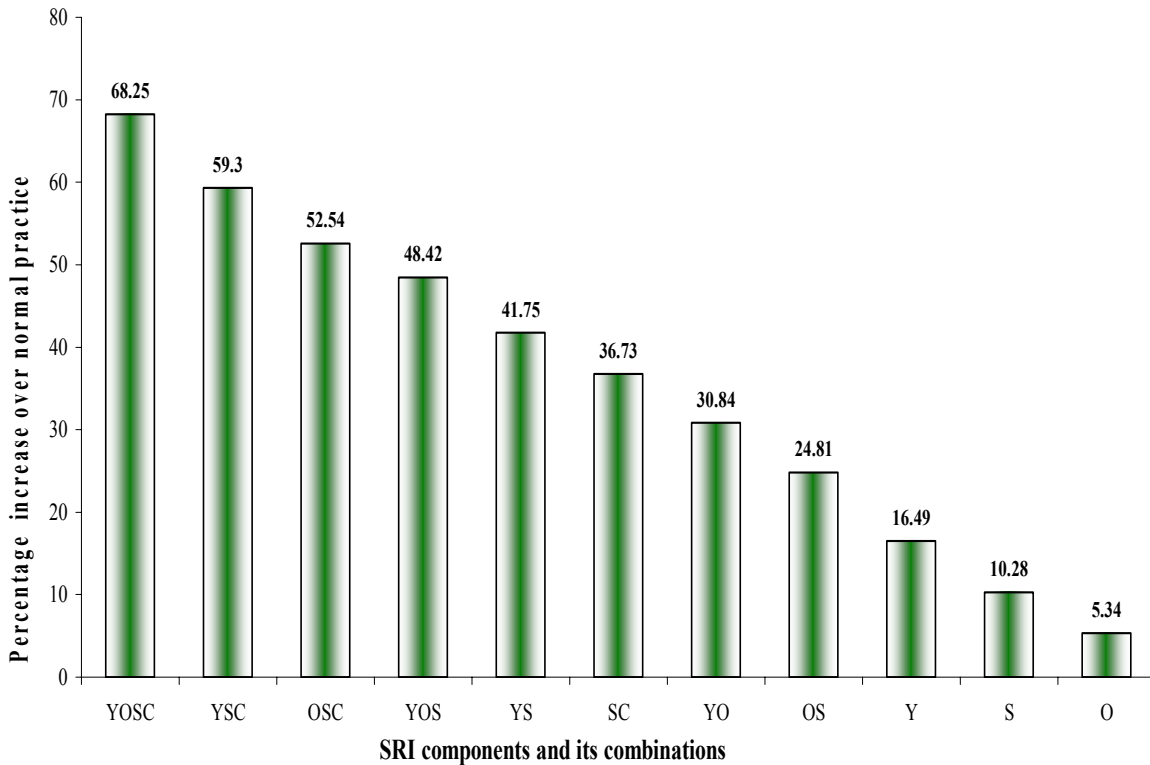


Fig. 1. Contribution of individual component and combination of components of SRI for the grain yield as compared to normal practice

- ❖ If the farmers are not able to adopt all the four SRI components (YOSC). However, most of the farmers could adopt atleast two or three of them, at his convenience, for obtaining higher grain yield.
- ❖ If the farmer is willing to adopt only one component, his choice should be Young seedling (Y), if he wants to adopt ant two, his choice must be Young seedlings + square planting (YS) ; if he wants to adopt three, his choice must be Young seedlings + square geometry + Cono weeding (YSC) .
- ❖ Even if multiple seedlings (2-3 hill⁻¹) are used instead of one seedling hill⁻¹, the yield reduction was only 196 kg ha⁻¹.

- ❖ Adoption of all the four components (YOSC) gave the highest net return of Rs. 12,547 ha⁻¹, followed by adoption of three components (YSC) which gave the net return of Rs. 11, 135 ha⁻¹.